

**WHAT IS CLAIMED IS:**

1. An enriched mushroom compost supplement, wherein the enrichment comprises the addition of a polysaccharide or polysaccharide composition to a mushroom compost supplement.
2. An enriched mushroom compost supplement of claim 1, wherein said enriched mushroom compost supplement provides a significantly higher mushroom yield when compared to a mushroom compost supplement lacking the enrichment.
3. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition is selected from the group consisting of cellulose, bond paper, newsprint, straw, starch, hemicellulose, cellobiose, glycogen, trehalose and BIODAC.
4. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition contains cellulose or cellulose-containing ingredients.
5. An enriched mushroom compost supplement of claim 1, wherein said enriched mushroom compost supplement dampens or suppresses temperature surges during spawn run.
6. An enriched mushroom compost supplement of claim 1, wherein said enriched mushroom compost supplement does not require additional antimicrobial or preservative treatment.
7. An enriched mushroom compost supplement of claim 1, wherein said enriched mushroom compost supplement suppresses or reduces the growth of pest and pathogen microorganisms.

8. An enriched mushroom compost supplement of claim 1, wherein said enriched mushroom compost supplement consists solely of polysaccharides.

9. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 10% to about 20% of the dry weight of said enriched mushroom compost supplement.

10. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 20% to about 30% of the dry weight of said enriched mushroom compost supplement.

11. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 30% to about 40% of the dry weight of said enriched mushroom compost supplement.

12. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 40% to about 50% of the dry weight of said enriched mushroom compost supplement.

13. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 50% to about 60% of the dry weight of said enriched mushroom compost supplement.

14. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 60% to about 70% of the dry weight of said enriched mushroom compost supplement.

15. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 70% to about 80% of the dry weight of said enriched mushroom compost supplement.

16. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 80% to about 90% of the dry weight of said enriched mushroom compost supplement.

5 17. An enriched mushroom compost supplement of claim 1, wherein said polysaccharide or polysaccharide composition comprises from about 90% to about 100% of the dry weight of said enriched mushroom compost supplement.

10 18. An enriched mushroom compost supplement of claim 1 comprising from about 0% to about 10% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

15 19. An enriched mushroom compost supplement of claim 1 comprising from about 10% to about 20% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

20 20. An enriched mushroom compost supplement of claim 1 comprising from about 20% to about 30% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

21. An enriched mushroom compost supplement of claim 1 comprising from about 30% to about 40% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

25 22. An enriched mushroom compost supplement of claim 1 comprising from about 40% to about 50% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

30 23. An enriched mushroom compost supplement of claim 1 comprising from about 50% to about 60% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

24. An enriched mushroom compost supplement of claim 1 comprising from about 60% to about 70% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

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25. An enriched mushroom compost supplement of claim 1 comprising from about 70% to about 80% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

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26. An enriched mushroom compost supplement of claim 1 comprising from about 80% to about 90% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

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27. An enriched mushroom compost supplement of claim 1 comprising from about 90% to about 95% (dry weight) of any one of Formula 7, Formula 8, Formula 9 or Formula 10.

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28. A method of increasing mushroom yield of a mushroom comprising the steps of:  
a) adding an enriched mushroom compost supplement of claim 1 to a mushroom compost,  
b) allowing the development of mature mushrooms; and  
c) harvesting said mature mushrooms.

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29. A method of claim 28, wherein the yield of said mature mushrooms is significantly increased when compared to a yield of mature mushrooms grown in the absence of said enriched mushroom compost supplement.

30. A method of claim 28, wherein said mushroom is a Basidiomycete.

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31. A method of claim 28, wherein said mushroom is a fleshy Basidiomycete.

32. A method of claim 28, wherein said mushroom is selected from the group consisting of *Agaricus bisporus*, *Lentinula edodes* (formerly *Lentinus edodes*), *Pleurotus* spp., *Flammulina velutipes*, *Stropharia rugosoannulata* and *Volvariella* spp.

- 5 33. A method of supplementing a mushroom compost comprising the step of:  
a) adding an enriched mushroom compost supplement of claim 1 to said compost; wherein said enriched mushroom compost supplement constitutes from about 1% to about 20% of the dry weight of said compost.

- 10 34. A method of supplementing a mushroom compost comprising the step of:  
a) adding an enriched mushroom compost supplement of claim 1 to said compost; wherein said enriched mushroom compost supplement constitutes from about 2% to about 10% of the dry weight of said compost.

- 15 35. A method of supplementing a mushroom compost comprising the step of:  
a) adding an enriched mushroom compost supplement of claim 1 to said compost; wherein said enriched mushroom compost supplement constitutes from about 2% to about 5% of the dry weight of said compost.

- 20 36. The enriched mushroom compost supplement of claim 4, wherein said cellulose or cellulose-containing ingredients have been treated to increase the bioavailability of cellulose.

37. An enriched mushroom compost supplement comprising elemental sulfur.

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38. An enriched mushroom compost supplement comprising elemental sulfur of claim 37, wherein said elemental sulfur comprises from about 0.05% to about 0.1% (dry weight) of the enriched mushroom compost supplement.

39. An enriched mushroom compost supplement comprising elemental sulfur of claim 37, wherein said elemental sulfur comprises from about 0.1% to about 0.15% (dry weight) of the enriched mushroom compost supplement.

40. An enriched mushroom compost supplement comprising elemental sulfur of claim 37, wherein said elemental sulfur comprises from about 0.15% to about 0.2% (dry weight) of the enriched mushroom compost supplement.

41. An enriched mushroom compost supplement comprising elemental sulfur of claim 37, wherein said elemental sulfur comprises from about 0.2% to about 0.25% (dry weight) of the enriched mushroom compost supplement.

42. A method of significantly reducing mushroom compost temperatures during a spawn run comprising the step of:

a) adding an enriched mushroom compost supplement comprising elemental sulfur to a mushroom compost;

wherein the temperature of the mushroom compost is significantly reduced during the spawn run when compared to a mushroom compost lacking the enriched mushroom compost supplement comprising elemental sulfur.

43. A method of claim 42, wherein said elemental sulfur comprises from about 0.05% to about 0.1% (dry weight) of the enriched mushroom compost supplement.

44. A method of claim 42, wherein said elemental sulfur comprises from about 0.1% to about 0.15% (dry weight) of the enriched mushroom compost supplement.

45. A method of claim 42, wherein said elemental sulfur comprises from about 0.15% to about 0.2% (dry weight) of the enriched mushroom compost supplement.

46. A method of claim 42, wherein said elemental sulfur comprises from about 0.2% to about 0.25% (dry weight) of the enriched mushroom compost supplement.